

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H05K1/02 H05K7/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H05K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, IBM-TDB, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 459 639 A (IZUMI SHIGEICHI) 17 October 1995 (1995-10-17) column 4, line 30 – column 5, line 59; figure 2 ----- US 4 509 096 A (BALDWIN GRAHAM J ET AL) 2 April 1985 (1985-04-02) column 3, line 13 – column 5, line 2; figures 1,3 ----- US 6 078 101 A (AIZENBERG EDUARD VOLFOVICH ET AL) 20 June 2000 (2000-06-20) column 2, line 65 – column 3, line 23; figure 1 ----- -/-	1-4,7,8, 10-14,16  1-4,7,8, 10-14,16  1,2,7,8, 10,16

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- \*&\* document member of the same patent family

Date of the actual completion of the international search

13 October 2004

Date of mailing of the international search report

25/10/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+31-70) 340-3016

Authorized officer

Dobbs, H

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 188 579 B1 (BUONDELMONTE CHARLES JOSEPH ET AL) 13 February 2001 (2001-02-13) column 1, line 64 - column 2, line 46; figure 1	1,2,7,8, 10,16

**INTERNATIONAL SEARCH REPORT**International Application No  
PCT/US2004/014209

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 5459639	A	17-10-1995	JP	7086717 A		31-03-1995
US 4509096	A	02-04-1985	FR GB	2541511 A1 2135525 A ,B		24-08-1984 30-08-1984
US 6078101	A	20-06-2000	WO AU BR RU	9825306 A1 2107197 A 9612488 A 2138098 C1		11-06-1998 29-06-1998 28-12-1999 20-09-1999
US 6188579	B1	13-02-2001	NONE			